

California GARDEN

SEPTEMBER—OCTOBER 1985

Seventy-five Cents

Volume 76 No. 5

ISSN 0008-1116



HORTICULTURE CALENDAR

September 5, 12, 19, 26*

Thursday Workshop with Colleen Winchell

Free Floral Crafts Instruction — Open to the public.
Casa del Prado, San Diego Floral Association Library
Balboa Park Thursday: 10:00 a.m.-3:00 p.m.
Information: 479-6433

September 7 *

Bus Tour to Little Tokyo and Naguchi Gardens in Los Angeles

Reservations: (619) 232-2661

September 7 & 8

San Diego Bromeliad Society Annual Show

Casa del Prado, Majorca Room,
Balboa Park Sat: 1:00 - 4:30 p.m.
Sun: 11:00 a.m. - 4:30 p.m. FREE

September 11, 18, 25 **

Flower Arranging with Adrienne Green

Casa del Prado, Room 101 or 102
Balboa Park Wed: 9:30 a.m. - 2:30 p.m.
Cost: \$25.00 per series

September 21, 22

San Diego Association Professional Horticulturists' Second Annual Show

Casa del Prado, Majorca Room
Balboa Park Sat: 10:00 a.m. - 5 p.m.
Sun: 11:00 a.m. - 4:30 p.m. FREE

September 24 *

Old Town Walking Tour (Guided by docent)

Meet at Visitor's Center, 2645 San Diego Ave.,
Tour lasts 1½ hours. Cost: 50 cents.

September 28, 29

Call for reservations: 222-2806 by September 17th.

San Diego Bonsai Club presents its 20th Annual Bonsai Show

Casa del Prado, Majorca Room,
Balboa Park Sat. & Sun.: 10:00 a.m. - 5:00 p.m. FREE
Demonstrations at 1:00 p.m. - 3:00 p.m. September

28, 29

San Diego Chapter of Ikenobo School of Ikebana, Annual Plant Sale

Casa del Prado, Sculpture Court
Balboa Park Sat. & Sun.: 10:00 a.m. - 4:00 p.m. FREE

October 2, 9, 16, 30 **

Flower Arranging with Martha Rosenberg

Casa del Prado, Room 101 or 102
Balboa Park Wed: 9:30 a.m. - 2:30 p.m.
Cost: \$30.00 per series

October 3, 10, 17, 24, 31 *

Thursday Workshop with Colleen Winchell

Free Floral Crafts Instruction - Open to the public
Casa del Prado, San Diego Floral Association Library
Balboa Park Thurs: 10:00 a.m. - 3:00 p.m.
Information: 479-6433

October 5 *

Bus tour for Apple Days in Julian with stop at Dudleys and Hadleys.

Reservations (619) 232-2661.

October 5 & 6

Balboa Park African Violet Annual Fall Show

Casa del Prado, Majorca Room
Balboa Park Thurs: 10:00 a.m. - 4:00 p.m. FREE

October 5 & 6

San Diego Rose Society presents a Miniature Rose Show

Plaza Bonita Shopping Center, 3030 Plaza Bonita Road
National City Hours: Sat: 12:30 a.m. - 6:00 p.m.
Sun: 12:00 noon - 5:00 p.m. FREE

continued inside back cover



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Advertising — Penny Bunker

Circulation —

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VOLUME 76

SEPTEMBER—OCTOBER 1985

NUMBER 5

133 AUTUMN GOLD

134 25 YEARS AGO

135 IT'S TIME TO GO NATIVE

136 THE GENUS MAMMILLARIA

137 TRY GARLIC-FLAVORED CHIVES

138 SNAILS

139 PAMPAS GRASS

140 FOR FLORAL ARRANGEMENTS

141 THE EDIBLE NASTURTIUM

142 THE SEEDS OF TOMORROW

144 PASSION FRUIT—NEW SENSATION

146 BEES & BUGS IN YOUR GARDEN

147 50 YEARS AGO

148 TERRESTRIAL CACTUS CULTURE

For The Amateur Collector

152 BOOK REVIEWS

155 NOW IS THE TIME

Bess M. Tittle

Carol Greentree

Jay B. Winderman

Frank C. Thrombley

Allethe Macdonald

Barbara Jones

Joanne H. Kerbavaz

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FRONT COVER — MEXENSIS BY KATHLEEN CRAWFORD

With reluctance, we must now raise subscription costs for CALIFORNIA GARDEN magazine effective for all renewals or new subscriptions received on or after 1 January 1986.

1 year subscription — 1985 cost \$4.00, 1986 cost \$5.00

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There will be no change in membership dues.

We can no longer provide a replacement copy free of charge if you fail to notify us of a new address at least 60 days in advance.

To remind you that your subscription is due to expire soon, a stamp 'SUBSCRIPTION EXPIRES NEXT ISSUE' will be stamped on or near your address label on the issue prior to expiration date. On the following issue, a stamp 'SUBSCRIPTION EXPIRED THIS ISSUE' means you are automatically dropped from the mailing list unless a renewal is initiated within that month. Make your renewals early to avoid missing an issue.

Classified ads will now be accepted.

We welcome articles which are both informative and interesting to California gardeners. Persons who furnish articles, front cover, photos, sketches, or pictures used in the magazine will be entitled to up to 3 copies of the California Garden magazine containing their contribution, in appreciation. Since we are a non-profit organization, no fees will be paid for articles or pictures. Submit articles double or triple spaced, and include postage if you desire to have your article or photos returned.

The policy listed above was approved by the Governing Board of the San Diego Floral Association on 2 August 1985 and is effective immediately, unless otherwise noted above.

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continued on page 158



AUTUMN GOLD

By Bess M. Tittle

A welcome addition to western gardens in the fall is the golden bloom of **Sternbergia lutea** — a bulb with travel credentials rivaling Marco Polo.

Native to Asia Minor and Southern Europe, from the Caucasus to the Mediterranean, it is said that the yellow trumpet-shaped flower first raised its head in Palestine.

Erroneously called a fall crocus, it is a member of the amaryllis family and a close kin to daffodils, though it is neither one nor a lily, although it is commonly dubbed "lily-of-the field." The true Biblical lily-of-the-fields, experts say, is the **Lilium Candidum** — Madonna Lily — called "Shoshan" in Hebrew — not "Shoshana" — rose — as mistranslated in the Song of Songs.

If you are now thoroughly confused, the botanical name of this fall beauty was derived from Count Kasper Moritz von Sternberg, a botanist of Prague, Czechoslovakia, who died in 1838.

For further obfuscation, pick your source: "The leaves appear at the same time as the flowers in the fall" — or "In the fall, the bulb sends up a half dozen dark green leaves from the center

of which flowers are produced," or "... sends up flowers first and the leaves come after the flowers fade..."

Suffice it to know that **Sternbergia lutea** has an autumn flowering, is one of the most beautiful hardy bulb plants, and is as easy to grow as it is lovely.

One memorable trip made by the modest though vigorous bulb almost 250 years ago was chronicled by Mary Selby Iturralde in **Horticulture** (August 1956). Transported across the ocean with other plants, sternbergia was set into the gardens of the Palace of the Royal Governors in Williamsburg when Virginia was still a British colony.

During the Revolution, the Palace was burned, the gardens fell into decay and weeds took over. But sternbergias continued to bloom and spread in the abandoned flower beds.

Through the years, ladies of the village helped themselves to the bright flowers, digging bulbs and transplanting them into their own gardens to become pleasant autumn surprises, bordering beds, tucked into rock gardens, rippling golden reflections in small pools.

Then 200 years later when Williamsburg was being restored, researchers began a search for 18th Century plants — studying inventories, dragging old letters and diaries out of attics, and compiling lists. One plant name which occurred over and over was *sternbergia*. No hunt was necessary: the bulbs were dug up from borders planted by great-grandmothers and transplanted virtually unchanged to the Palace gardens where they had originated all those years before.

Iturralde writes, "Thus the first *sternbergias* to bloom in the restored garden were truly direct descendants to the first bulbs that had started life behind elegantly reposing brick walls where they were tended by humble slaves."

The Williamsburg Garden Club adopted *sternbergia* as the club flower, celebrating its unhybridized, persistently vigorous survivor.

Now the bulb grows in all zones in the United States. *Sternbergia* comprises four species and a few varieties or, according to some authorities, eight species.

They are true bulbs formed with concentric layers, like onions. Leaves are straplike, long and dark green. The blooms appear from the center, one or more rich golden chalices, 1½ to 2 inches long on short stalks; flowers glow brightly for some weeks. The foliage remains throughout the winter, dying in late spring.

Planting should be done in late summer. Besides, on the fronts of flower borders, the plants can be tucked into choice nooks around the fringes of shrubberies and rock gardens or grouped in drifts. Plant over a shallow-rooted groundcover, avoiding stronger-rooted species which might compete for moisture and nutrients. A depth of 4 to 6 inches in deep, nutritious, dryish soil is best. They need sun and light and part-day shade. In the coldest climates, use a sheltered location.

Once the bulbs are planted, they take two to three years to become established. As long as they are doing well, dig up only for propagation. Lift, divide, and replant only when bulbs become crowded. Transplant as soon as foliage dies down and propagate by offset, bulb cuttings or seed.

From the Caucasus to California, this small yellow flower heralds the fall. It is not seen in flower shows nor does it even lend itself easily to arranging. No part of it is useful — for medicinal purposes nor for food — in fact, it is poisonous if eaten. Yet, generation after generation of gardeners have been attracted to the hardy vigorous bulb.

In the Galilee today, the gleaming cups of *sternbergia* can be spotted growing wild in the fields, unchanged direct descendants of bulbs which grew there centuries ago. Enterprising Israeli botanists are planning to develop new strains to be marketed for cultivated gardens all over the world.

You will find the bulb available in nurseries in southern California and other areas of the country. Check with your local bulb supplier or nursery in late summer or early fall.

Announcing . . .

The Board of San Diego Floral Association is pleased to announce the appointment of Elizabeth Glover as editor of *California Garden* magazine.

Following her retirement, with the rank of Commander, from the U.S. Navy, Elizabeth has created a fabulous one acre garden. She specializes in epiphyllums, ferns, cactus, succulents, begonias, geraniums and rare fruits, and grows specimen plants of many other species. For the past year she has gained experience in every phase of the magazine production and distribution.

Through the 76 years of publication, *California Garden* has endeavored to provide the best information available on growing plants in this area. Elizabeth Glover is qualified in every way to continue this tradition.

Althea Macdonald has been appointed Editor Emeritus because of her many years of work on, and dedication to, the *California Garden* magazine.

Barbara S. Jones, President San Diego Floral Association

"25 YEARS AGO"

by
Carol Greentree

"Kate O. Sessions Memorial Park"

by George A. La Pointe
(Autumn, 1960)

The gestation period of parks is measured in years — twenty-seven, already, in the case of one in Pacific Beach. That is more than ten times as long as it takes to produce an elephant, yet no longer than it sometimes takes to grow a fine tree . . .

In 1948 certain land was named Soledad Terrace Park, and in 1957, at the request of Pacific Beach citizens, it was redesignated as Kate O. Sessions Memorial Park. The citizens also began demanding a park to live up to the name. In this year 1960, their demands are now being met: work is expected to begin this fall on a three-year program which will turn the twenty-one southernmost acres into an area with recognizable park features . . . memorial to Miss Kate O. Sessions, the park is unusually appropriate, for it was in a pink stucco house to the west of the site that she spent the last years of her life. . .

People refer to her now as Kate, K.O., KOS, and Aunt Kate, but the people who knew her best lean heavily toward "Miss Sessions". This tendency seems not only to be a holdover from a more formal age, but also a mark of respect. She was always picturesque in person and language, but she was a formidable character — though a warm one — and no one seems to have treated her lightly . . .

It's Time To Go Native

By Jay B. Winderman

If your heart is set on a beautiful flower garden, but your daily routine leaves little time to care for one, California native trees and shrubs are for you. Whether building or rebuilding a garden, these hearty plants that dot our deserts, line our valleys, and rim our coastlines are an excellent choice because of their proven adaptability to our climatic conditions. They require little upkeep and almost no artificial watering.

With water becoming less plentiful and more costly, a California native garden can pay practical dividends as well. The Metropolitan Water District, in its water supply availability report Number 948, predicts that there could be as much as a 25 percent shortage by the year 1990, with prices expected to be up considerably. Because close to 35 percent of all domestic water is used outside the home, a considerable cost savings can be realized.

HOW TO GET STARTED

"My advice to those thinking of establishing a California native garden," says Brad Burkhart, manager of an Encinitas nursery specializing in native plants, "is to first familiarize themselves with those plants which originally grew native on their garden sites and use these as the basis for their gardens." Brad invites people to visit his demonstration garden. He also suggests that they view a new slide show produced by the San Diego Chapter of the California Native Plant Society.

Other locales where our native plants may be viewed are the Rancho Santa Ana Botanic Garden in Claremont, Santa Barbara Botanic Garden, Quail Botanical Gardens in Encinitas, and San Diego Wild Animal Park. These gardens are open daily and hold annual plant sales.

In planning a California native garden, Ray Walsh, owner of a native plant nursery in LaVerne, California, suggests that shape and form is as important as color. According to Ray, groupings of similar varieties, mixtures of tall and short plants, and even the addition of a mound of soil with some well placed boulders can add that special eye appeal.

Plants should be spaced around the garden so that those in different areas come into bloom at different times. And colors should be coordinated with the care of an interior decorator.



Plant: *Brickellia californica* — Photographer: Jay B. Winderman

BOOKS TO READ

Many excellent books and pamphlets have been written about California native plants. Here is a sampling:

Native Plants for California Gardens, Lee Lenz, Rancho Santa Ana Botanic Garden, Claremont, CA, 1956

California Native Trees and Shrubs, Lee Lenz and John Dourley, Rancho Santa Ana Botanic Garden, Claremont, CA, 1981

Trees and Shrubs for Dry California Landscapes, Bob Perry, Land Design Publishing, San Dimas, CA, 1981

Colorful California Native Plants, Edward Peterson, Theodore Payne Foundation for Wild Flowers and Native Plants, Sun Valley, CA

Native Trees of Southern California, University of California Press, Berkeley, CA, 1966

How To Have a Green Garden in a Dry State, Metropolitan Water District of Southern California, Los Angeles, CA (free pamphlet)

Xeriscape, Municipal Water District of Orange County, Santa Ana, CA 1985 (free pamphlet)

WHERE TO BUY YOUR PLANTS

Once you are ready to take the plunge, you will find a number of nurseries available to fill your needs.

Jay B. Winderman is an Engineering Specialist at General Dynamics. His hobbies include raising turtles, playing bridge, and, of course, growing and studying California native trees and shrubs. He occasionally writes articles and short stories.

Chrysanthemums are said to have been grown in China in 500 B.C. Their breeding and cultivation spread to Japan in 400 A.D. where the chrysanthemum became the Imperial flower.

THE GENUS MAMMILLARIA

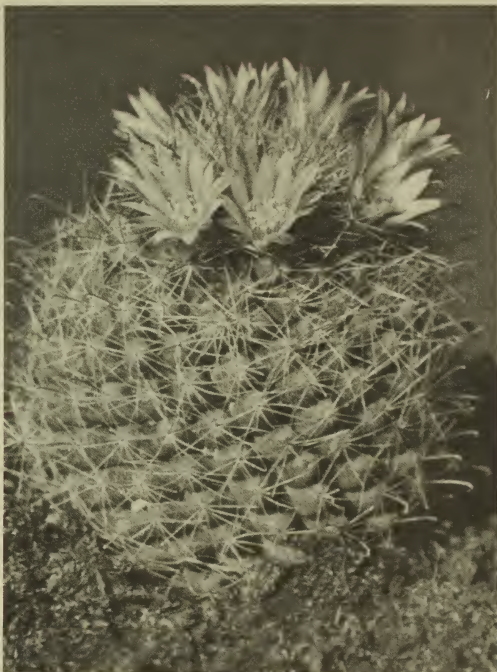
By Frank C. Thrombley

The genus **Mammillaria** is predominately of Mexican distribution. Its range does extend to Colombia and Venezuela in South America with a few species that are endemic to that region, and two in the West Indies. The species found in the United States range from south-central Texas westward through southern New Mexico, Arizona and southern California. All of those found in the United States are also found in Mexico. If one were to be asked where a specific species of **Mammillaria** originated, he would be safe in saying Mexico. There are more than 300 species native primarily to that country.

Adrian Haworth established the genus in 1812, deriving the name from the Latin term, Mamilla, which means nipple, due to its knoblike prominence. This alludes to the tubercles of the plants which are arranged in spirals downward from the apex in both clockwise and counter-clockwise directions. The tubercles are variable in form and arranged in intersecting spirals which are, in general, a diagnostic character of the relative species. There are no ribs on these plants.

This genus of plants is mostly clustering or branching, low, globular or oval, or cylindrical and sometimes much elongated. Some will stay solitary throughout their lives, and others will form very large clustering mounds. Their sizes range from: **Mammillaria saboae**: Body remaining small, simple or offsetting, from 1/2 inch to 12 inches high to **Mammillaria guerrieronis**: Body cylindric, 2 1/2 inches diameter by 30 inches high and caespitose.

The spines are arranged in various positions within the areole at the apex of the tubercle. Some species bear only central spines and others bear only radial spines, while most species have both. The variation in spine size and structure is often influenced very strongly by the environmental conditions as well as the hereditary factors, hence the spine count, as a species separation factor, is in many cases an artificial division and individual members of a species will often overlap these arbitrary limits. The central spines may be either straight, bent or hooked at the tip, but the radial spines are nearly always straight, or at most, only slightly bent in their over-all length.



Mammillaria wildii is prized for its beautiful spines as well as its bell-like flowers.

The flowers arise from the axils (depressions between the tubercles) and not from the areoles. The flowers are variable in size, but mostly small, colors ranging from white to yellowish to red. The flowers appear in a ring, from the axils of the previous year's growth, and never from the apex of the plant. The clublike fruits of the flowers appear from the axil at maturity and are green to red in color. It is not uncommon to have a ring of flowers and a ring of fruit on a plant at the same time - a very pretty sight.

The **Mammillaria** genus is further divided into two divisions. The sap that is found in the tubercles has been used as one of the major dividing factors. One fairly well defined group of species has a nearly clear to amber-colored or so-called watery sap while the other group has a whitish or so-called milky sap. The group with the watery sap is in the **Hydrochylus** division. The group with the milky sap, which is not found in any other member of the cactus family, is in the **Gal-acto-chylus** division.

Most species are of easy cultivation in any good loamy soil. As a general note I would recommend a moderately rich but well drained, gritty soil. Due to their wide distribution, some of them inhabit cold hilly regions, or the plains of the prairies, and at times are covered with snow. Others inhabit areas with sandy soil, or

even a soil stony and gritty. Most of them prefer half shade during the hottest period of summer. In their native habitat a great majority of these plants are afforded partial shade from grasses and dried wild annual plants which grow around them. They adapt well to pot culture, but one should be aware that they will not tolerate stagnant water.

To study and grow these fascinating plants with their various forms could be a lifetime with many happy hours. What a hobby!

References

Backeberg, Curt, 1977, *Cactus Lexicon*, Blandford Press, England

Borg, J., 1976, *Cacti*, Blandford Press, England

Craig, R.T., 1945, *The Mammillaria Handbook*, Abbey Garden Press, Pasadena, California

Try Garlic-Flavored Chives

By Allethe Macdonald

A pleasantly mild garlic-flavored chive, usually called Chinese chive, *Allium tuberosum*, not only is a delectable seasoning, but has flowers pretty enough to grace any garden.

Starlike clusters of heliotrope-scented white flowers begin to bloom in early summer. Numerous stiffly erect 1 to 2 feet tall flowering stalks soon cover the plant. However, on young plants it is better to remove the flowerbuds to prevent decrease in the production of new young leaves. If allowed to remain on the plant, they will develop into globelike pods filled with dark seeds. Flower arrangers cut the pods, after they have matured and dried, to use in dried arrangements.

The light green leaves of this chive, when young, look very much like onion garlic, but as they mature they become broader and flat. They have a delightful mild garlic flavor, but do not try to eat the flower stalks, which are strong and tough.

In addition to using the chopped foliage, the densely clustered very slender bulbs can also be eaten. Even the flowers are edible and can be a treat in a fresh garden salad. Should their fragrance delude you into thinking they are not an onion, crush a leaf or two for confirmation of their relationship. Chive belong to the same family as garlic, shallot, and leek. When gathering the leaves, do not cut them with scissors as this causes them to die back slightly leaving an

unattractive brown edge. Always pick them off at the base with your fingers.

CULTURE

All chives can be grown easily from seed when planted in spring or fall. Sprinkle the seed over fine moist soil and cover lightly. In mild climates they can be sown outdoors. You can expect to see the grasslike seedlings in 10 to 14 days. When they are large enough to handle, thin to 5 inches apart. Garlic chives should receive full sun to light shade. Almost any type of soil is fine, but they do best in one that is rich in organic matter and well drained. Although the plants will stop growing if they dry out completely, they will survive.

If the seeds were planted indoors they may be planted out in the garden or in 6-inch pots when they look like delicate grass.

Bulbs may be planted either in the spring or fall. Once established, they need to be divided every three years or they will become overcrowded and slow their production of tender, new leaves. To increase your supply, divide clumps into single bulbs. Otherwise, leave three to five in each division. Space divisions about 5 inches apart, planting them at the depth they were originally growing. They die down in winter, but will come back in spring.

Even if the flavor of garlic does not appeal, the fragrant bloom is delightful.

SNAILS

By Barbara Jones

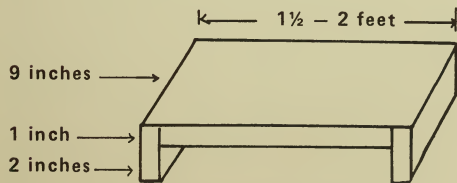
Ever wonder why there are so many snails in southern California? The first reason is because they have abundant food. Researchers have discovered that they like over 200 commonly grown plants. There is no way that one can have a garden without including several snail tasty treats.

The second reason is the climate. Ours is perfect. The European brown snail, *Helix aspersa*, was first identified in Italy in 1714. It spread throughout the temperate zone of the European continent by riding on transported plant material or by being introduced for food. In the late 1800's it was introduced into California for food in the Bay and Los Angeles areas by a person named Delmas. By 1900 the snail had spread throughout the state and it has been a problem ever since.

Low temperatures and dry weather do slow snail activity, but this condition rarely exists in the San Diego area.

The third reason is because snails are so prolific. They are hermaphroditic, each pair possessing both male and female organs. Each will lay approximately 400 eggs from April to November.

Most animal populations are kept under control by predators. Unfortunately, there are very few snail predators in California. Snails are eaten by rats and a few young snails are eaten by birds. In recent years the predator snail, *Rumina decollata*, has been hailed as the new brown snail eradicator. It consumes the eggs and young of the brown snail. (Its other food is reported to be decayed vegetation and fruit.) Decollates are being used commercially in southern California, but many experts are worried about introducing another snail into this favorable environment. They have been introduced into San Diego gardens. Often the snails just disappear. I used them in a small area surrounded by cement where a Meyer lemon hedge was growing. (Snails love Meyer lemon leaves.) I had no brown snails in the area for about five years. All of the decollates are gone now, the brown snails have returned.



WOODEN SNAIL TRAP

A time-honored method of snail control is to find them and step on them... messy! Hand-picking snails in the early morning and evening is probably the best control method. An experienced snail hunter knows how to find them. Snails seek cover during the day, and pieces of wood raised a bit off the ground will make good shelters when placed around in the garden. Snails can be found hiding under leaves and seem to favor the base of plants such as the Bird-of-Paradise. Ivy is one of their favorite resting and breeding places. For the first few days hunting should be done daily. When it is noted that the population is decreasing, a weekly hunt should keep them under control. If there are tender, new, young vegetable or flower seedlings in the garden, nightly hunts with a flashlight are advisable.

I have a friend who has one of the most beautiful annual gardens I have ever seen with many plants beloved by snails. She places banana peels around her garden in the early evening, then removes and disposes of the peels and the numerous snails they attract a few hours later.

One of the best methods to dispose of the snails after they have been caught is to drop them into a half-gallon covered glass jar half-filled with water to which 1/3 to 1/2 cup of household ammonia has been added. The solution will kill the snails and the ammonia will help to dissolve the shells. When the jar is full, the resulting liquid will be a rich organic food for the garden. I keep several jars hidden in convenient shady places around my garden.

There are numerous commercial chemical controls available. Any bait which contains sevin seems to be moderately effective if applied at two week intervals. The instructions and cautions should be followed carefully. Usually it is advisable to spread the bait in the evening to well-watered soil. It will do no good to apply the bait to areas where the snails rest. It should be placed where they feed.

Placing saucers of beer in depressions around the garden is a method often touted as a way to eradicate snails by drowning. No gardener I know has ever found this effective, but a few cases of mildly intoxicated pets have been reported.

Most agricultural experts agree that it is impossible to eradicate the common garden snail. But it might be possible if we could get enough small children involved. They really enjoy snail hunts. When my children were small, they were given a bounty of a penny a snail. I think the neighbors often benefited. It was a great arrangement while it lasted - the children earned extra spending money and my garden was snail free!

Good hunting! It's the season.

Barbara Jones, a member of the staff and former editor of *California Garden*, is a graduate scientist (Botany) and writes for scientific and gardening publications. She is President of the San Diego Floral Association.



Pampas Grass

By Joanne H. Kerbavaz

The genus name of pampas grass (**Cortaderia jubata**) comes from one of the plant's undesirable qualities. **Cortadera** is Spanish for "cutting," a reference to the grass's sharp, saw-toothed leaves. There are two species of pampas grass in California: **Cortaderia jubata**, the species with tall flower stems (culms), is the invasive one; **Cortaderia selloana**, the species with culms about the height as clumps of leaves, seldom spreads.

Cortaderia selloana, a native of Argentina and southern Brazil, was brought into the United States around 1848. In 1874, horticulturalists discovered that the plant was dioecious, and that flowering plumes from female plants were more beautiful than those from male plants. Samples of female plumes were sent to a buyer in New York, and a new industry began. Growers in Santa Barbara County supplied the world with plumes at prices up to \$200 for 1000 plumes. Fashions changed, and harvesting ended about 1895. The weedy pampas grass, **Cortaderia jubata**, is native to the Andes of Bolivia, Peru, and Ecuador. It reproduces apomictically - seeds form without pollination - and all plants are female. Each plume contains thousands of tiny, wind-distributed seeds.

Cortaderia jubata was introduced to California for landscaping. By the 1960's, it was apparent that the introduction was a mistake. In 1966, foresters in Humboldt County complained about

pampas grass invasions that choked out redwood seedlings. In a July 1976 article in *Fremontia*, Bruce D. Cowan warned that pampas grass was spreading in the Monterey Peninsula at such a rate that eventually "there would be little left but pampas grass - and probably some French broom."

Pampas grass is a problem, primarily along the coast. **Cortaderia jubata** appears to be frost sensitive, which probably limits its spread inland. It colonizes disturbed areas, but it can grow in natural openings and has taken over some entire hillsides along the central coast.

To date, the best control method for pampas grass is to remove adult plants before they flower, and then take out any seedlings that sprout. Local cooperative Agricultural Extension offices have information on methods of control and provide free advice.

Joan Kerbavaz, an Associate Environmental Planner with Caltrans, is currently studying in the Graduate Group in Ecology at U.C. Davis, and is serving as Recorder for the State CNPS board.

Reprinted, by permission, from the FREMONTIA, a journal of the California Native Plant Society, January 1985.

For Floral Arrangements

text and photo by Bill Gunther



Illustrating this text are photographs of the beautiful blossoms and foliage of a plant from South Africa which feels right at home and thrives happily in coastal southern California. Very few Californians know that it even exists.

Its botanic name is **Anomalesia splendens**; it has no common name. It is so rare in cultivation that it is not listed in *Hortus Third*, in the New York Botanical Garden Encyclopedia of Horticulture, or in *Sunset's New Western Garden Book*.

This plant is an irid, which means that it is related to the gladiolus and to the iris. Like them, it grows from a perennial corm or bulb, and propagates readily from seed. The blossom color is a subtle blending of pastel green and yellow. This unique coloring, the unusual blossom shape, the long-lasting quality of the blooms, the attractive airy foliage, and the slim stems — all in combination — make this plant a beautiful asset to any garden, and a particularly special item for use in making artistic floral arrangements.

These photographs were recently taken at the Quail Botanical Gardens in Encinitas, California where **Anomalesia splendens** is being propagated for distribution. When you next attend one of the biannual plant sales at Quail, look for this plant for your own home garden. Plant it in well-drained loamy soil in a sunny location free of tree roots and free of gophers.

Bill Gunther is a trustee of Quail Botanical Gardens and has a keen interest in all facets of horticulture.

"75 YEARS AGO"
by
Carol Greentree

"Acacia Baileyana" by K.O. Sessions
(October, 1909)

The beautiful specimens of **Acacia baileyana** along the park boulevard between Fir and Juniper, are well worth seeing now. The color of the foliage, their compact and vigorous growth, the quantity of tiny buds, well set for January and February blooming, make the tree a very beautiful object and worth study and close observation.

This acacia is one that needs very severe pruning in the spring, after the flowers have passed by. The plants in the park are an excellent lesson in their culture.

This beautiful tree was discovered in New South Wales and named in honor of Prof. L.H. Bailey; now Dean of the College of Agriculture of Cornell University.

Prof. Bailey has been a voluminous writer on all horticultural subjects.



The Edible Nasturtium

By Rosalie Garcia

That golden sheen one sees on the hillsides, ditch banks, garden walls, or any wall from early spring until the hot days come in our sub-tropical climate is the hardy, vining nasturtium. In a way, it is a tender succulent-like juicy-stemmed plant that is amenable to good treatment like moderate moisture and fertilizer, but will survive with little or none of either. Seeds will scatter by the birds or the wind, fall on all kinds of places and germinate in early spring with no care. How can one fail to appreciate such marvels of nature?

The botanists have had difficulty putting it in a class and have sort of lumped it into the **Cruciferae** along with the cresses and worts and named it after a Latin word meaning nose twister - because of its very spicy odor. Some seeds are almost as hot as some peppers.

The common one is the single fine-petaled blossom at the end of a tender stem, long and delicate if well tended, but short and sort of wiry if moisture is scarce. It varies in color from almost white through various shades of yellow, to orange and red with dark center markings.

A double has been developed of a bush variety, very pretty in low borders and edgings, for pots and window boxes. These need care of regular moisture and light fertilizer. They are hybrids, so new seeds need to be bought every year.

In semi-shade these doubles can be grown all summer, but the single vining ones will start turning yellow and dying when the temperature becomes warm. A few linger on in shady places, but they bloom very rarely.

Because of its "seed" reputation, the nasturtium seldom makes it into art circles, but in a recent North County flower show, there was a memorable arrangement of the common yellow and orange ones very cleverly and artfully designed into what to me was the most memorable exhibit there. (I was not judging designs). It was airy, shimmering, alive and made a statement, the mark of any work of art. It takes patience and time to achieve such a design, for the stems are tender and hard to manage, and the blossoms have a tendency to hang on to anything and snap off just as the arranger is ready to place them. A pinholder does not help unless the stems are bunched and supported so they will stay in position. They are better used by cutting end sprays on which there are several blossoms. The stem of the spray is firm enough to stand. Several sprays well arranged will last for days. The single flowers,

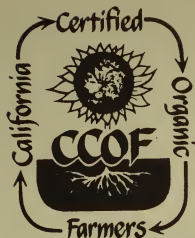


if picked when half open, will add a bright note on the breakfast table and they will last several days. If the leaves droop, leave it in water overnight and by morning they will be perky again and last for days.

Often a lot of seeds scattered by the birds or the wind come up. When they are 2 to 3 inches tall, pull them up, cut off the roots and toss them into the salad bowl along with other greens. They add a crunchy, spicy taste that is pleasant.

Between slices of buttered bread, they make fancy finger sandwiches or spice up cheese and cold meats. You'll be surprised at how many persons never knew or thought of using these dainty, succulent "weeds" in sandwiches or salads!

This is the last article that Rosalie Garcia wrote for this magazine before her demise last year.



The Seeds of Tomorrow

By Oscar Jaitt

"Everything you ate yesterday, what you eat today, and what you shall eat tomorrow comes from a seed."

Corn and wheat together supply about 25 percent of the annual calories produced on earth. What would happen if the world's corn and wheat crops were attacked by pests and destroyed for several consecutive years? There would be wide-spread famine, not just in the poor third world countries but also in the industrialized nations. Unfortunately, this is not as unlikely a scenario as it may seem. Every day agricultural practice is increasing the likelihood of just such an event.

As little as 50 years ago such an occurrence would have been much more unlikely. At that time seed sources were still highly diversified. Several hundred seed companies supplied the farmers of the world with a diverse variety of seeds. There were hundreds of genetically different varieties of corn and wheat sold in different parts of the world. Even if one crop were to be destroyed by a particular pest, another variety could be found elsewhere that was resistant to attack by that pest. The resistant variety could then be introduced into the ravaged area and the crop grown successfully the next year.

Today a handful of multinational corporations grow and distribute 90 percent of the world's seeds. Because the source of seeds is now so centralized, there is an increasing movement towards genetic uniformity. Whereas just several decades ago there were hundreds of varieties of corn grown just in the United States alone, today 6 varieties comprise 71 percent of the acreage planted to corn. Similarly, only nine varieties of wheat comprise 50 percent of the wheat grown, and all our other staples are also suffering from increasing uniformity of type. (see chart)

In nature pestilence is averted by means of an ever increasing evolutionary trend towards variety. If one particular type of animal or plant is destroyed by predators, many others are on the scene that have developed immunity to attack. But has not modern science also developed many resistant varieties in the laboratory? Are not geneticists always developing new resistant hybrid varieties of crops? While it is true that the number of resistant hybrid plants is being developed at a very fast rate, the genetic pool, on the whole, is being diminished in size. Laboratory hybrids are so inbred that they contain a high percentage of identical germ plasm. The diversity is really an illusory one.

Chart A

GENETIC UNIFORMITY

Extent to Which Small Numbers of Varieties Dominate Crop Acreage in the U.S.

CROP	MAJOR VARIETIES	% OF ACREAGE DEVOTED TO THESE VARIETIES
Beans, dry	2	60
Bean, snap	3	76
Cotton	3	53
Corn	6	71
Millet	3	1 00
Peanut	9	95
Peas	2	96
Potato	4	72
Rice	4	65
Soybean	6	56
Sugar beet	2	42
Sweet potato	1	69
Wheat	9	50

SOURCE: The National Academy of Sciences.

As recently as 1970, 15 percent of the nation's corn crop was destroyed by leaf blight. In some regions of the south, as much as 50 percent of the crop was destroyed. Upon examination it was discovered that 80 percent of the corn seed planted contained the identical genetic material, Texas male cytoplasm. In 1953 and 1954 the wheat crop was similarly ravaged by stem rust. Three quarters of the lost crop was of a single variety, durum.

In centuries past, famines have occurred because of similar shortsightedness. When Sir

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Walter Raleigh brought the potato into Ireland, only one variety was widely planted. The "lumper" variety which he imported was not resistant to potato blight. Millions starved to death. Had several varieties of potato been planted, the famine would have likely been avoided.

In its native Peru, hundreds of varieties of potato were once cultivated. Now there is an ever increasing trend to plant a few European types. Ninety percent of the genetic stock of our crops originates from such equatorial countries. Rather than encouraging this diversity, the multinational seed companies have embarked on a program to push their "superior" hybrid varieties on these third world countries. As a result, thousands of varieties of grains, vegetables, and fruits are becoming extinct every year.

Though this problem has received little public attention, some things are being done to avert a possible disaster. At the United Nations, the International Board for Plant Genetic Resources encourages countries to propagate and store a diverse variety of plant germ plasm. The United States Department of Agriculture's National Plant Germ Plasm System has five stations at which it stores seeds in airtight freezers. Unfortunately, this only provides a short term solution. Even

in the most controlled situations, seeds can only be kept alive for 10 to 20 years. In order to retain this genetic wealth for future generations, the seeds must be periodically grown and multiplied. As yet no government has systematically embarked on such a program of seed preservation.

But at the grass root level, many small organizations world wide are taking action. The international Board for Genetic Resources publishes a newsletter and a seed directory for North America of companies that save rare, heirloom, and endangered varieties. One such group in the United States is the Seed Saver's Exchange. Its members grow and redistribute seeds of endangered and rare varieties of food plants. Kent Whealy, founder of the organization, has, in a few years, saved hundreds of varieties of beans, hundreds of varieties of corn, tomato, and countless others available to its members. If your grandmother used to grow a delicious tomato you cannot find in any seed catalogue, chances are this is the place you will find it.

Resources

Mark Schapiro "Seeds of Disaster", Mother Jones, December 1982.

Seed Savers Exchange - Attn: Kent Whealy, 203 Rural Ave., Decorah, Iowa 52101
International Genetic Resources Program, P.O. Box 1029, Pittsboro, N.C. 27312

Oscar Jaitt is a member of the Seed Saver's Exchange, a landscape gardener, and a gardening consultant.



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KATHLEEN CRAWFORD

Passion Fruit — New Sensation?

By Sharon Siegan

Will it take over the garden landscape, become a favorite juice ingredient, or simply compete with other exotic plantings as a conversation piece? These are not idle questions about passion fruit. This lush, tropical vine bears striking white-petalled, purple-crowned flowers, followed by deep, smooth-skinned, plum-like fruit, which develops a crinkled exterior shortly after harvesting.

Like kiwi, passion fruit is a New Zealand import. And like kiwi, it is being promoted commercially as an exotic fruit. Hoping to cash in on its current popularity in Puerto Rico, an advertising blitz to introduce it to the American beverage market is planned. Locally, there has been a proliferation of rare fruit and other nurseries all introducing new *passiflora* hybrids in both ornamental and edible form.

Passiflora, whether edible or ornamental, is neither new nor aphrodisiac. Centuries ago the Spanish missionaries named the flower for

its striking similarities to Christ's passion. Encountering the vine in the new world where they ventured to spread the faith, the missionaries made the following observations: each flower's ten petals represented the apostles; the filaments signified a halo or a crown of thorns, and the five stamens, Christ's wounds. The pistils identified the three nails, and even the deeply cleft, tri-lobed foliage assumed the hand shape of Christ's persecutors.

Why then the sudden interest in *passiflora*? Seemingly, it reflects a culmination of social and cultural forces that are changing consumption patterns. The fruit, ubiquitous in the Puerto Rican landscape, was largely ignored because the taste was considered unpalatable. About eight years ago, a Georgia hippie imported a Brazilian strain into Puerto Rico and formed a co-op to grow this strain. Tastewise, this variety quickly caught on and became a popular addition to many fruit drinks and punches. Because the flavor is both dominant and distinctive, only a small amount is needed for a fillip.

Now back to local history. In the San Diego area, like the rest of the country, people are captivated by new taste sensations. The original purple passion fruit, *P. edulis*, is used to flavor Hawaiian punch, and has been one of the exotic "31 flavors" of ice cream. This was considered a proper candidate for hybridization, resulting in two progeny: 'Paul Ecke' and 'Black Knight.' 'Paul Ecke' is the largest fruit of the purple variety and the latter offers a small but less tart fruit. There is also a yellow passion fruit, *P. edulis* forma *flavicarpa*, named 'Brazilian Golden' and rated sweet as an orange by some who raise it. *Flavacarpas* in general are larger than the purple fruit, and considered more lemony, tart, or sour. Consequently, the sweet Brazilian one is a real breakthrough and may well surge to popularity.

Size-wise, there is an oddity name *P. quadrangularis* whose fruit approximates a papaya but will never rival it flavorwise; quadrangularis is sour, sour, sour.

Other flavor innovations have been tried, not always successfully. Brian Lievens, a rare fruit specialist, confided that the laurelfolia I had planted, represented to be coconut flavored, is likely to have reverted to its purple genotype. (The plant has not yet flowered, so I will withhold judgment.)

Regardless of which variety is promoted commercially, the passion portion of the name will be emphasized, perhaps coupled with a disclaimer, inasmuch as physicians warn that the fruit actually lowers blood pressure. Pharmacies in Puerto Rico sell the extract as a tranquilizer and it is an ingredient in a German sleeping pill. Other medicinal claims include lowering cholesterol, dissolving fat, and providing vitamins. The fat-dissolving properties may be related to the passion fruit's affinity for fatty foods as a basting ingredient. Add it to sauce or basting juice for all poultry, but particularly duck, and lavish it on pork. The common purple passion fruit is particularly harmoni-

ous with pineapple and other citrus fruits, and it has been used to flavor jellies made from other exotic fruits.

Whichever flavor of passion fruit you favor, the trick for the home gardener is extracting the juice. A juicer, of course, makes light work of it. Simply slice each fruit in half, scoop out pulp and seeds and place everything but the shell in your juicer. Turn on the electricity, and voilà you have juice from which the seeds have been screened. If carrots or some other pulpy vegetable have first been juiced, the passion fruit seeds will be nicely embedded in that residue. This then can be buried directly in the garden wherever needed to enrich the soil, or start a *passiflora* groundcover.

Lacking a juicer, a blender will do, but this requires manual straining through a sieve, cheesecloth, etc. to remove the seeds. Juicing the passion fruit is also a slow process, requiring perhaps as many as 20 fruits to fill an 8-ounce juice glass. As previously noted, the resultant concentrate is potent, and may be added in small amounts as flavoring. Freeze it in small ice cubes to be available as needed or desired.

Passiflora can also be grown as a non-fruiting vine. Again, there have been many new introductions of the ornamental ones recently. The sterile 'Coral Gem' flowers continuously. New colors in the red to orange spectrum including pink and salmon variations are now available. And hybridizers have even been working on scent and foliage. 'Alata,' a magenta-purplish cultivar, is perfumed, as is 'Incense,' the latter being semi-deciduous. Another has a clove-like aroma. Finally, some *passifloras* are grown solely for their striking foliage. One such is three-pronged, silvery pink *P. trifasciata*.

Whether it fruits or not, the attraction of *passiflora* as landscape material is great. It is fast growing, of delicate green, and can quickly screen out an undesirable area. Train it on a fence, lattice, or wall spurs. Or allow it to meander down an embankment as a ground cover. You may choose from semi-deciduous to evergreen, and select any other attributes, such as color, scent, fruit, etc. But remember to prune severely, opening up the interior to sun and air. Otherwise, you will encourage blight and decay.

Passiflora, as you may have deduced, enjoys sun, water, and good drainage. However, it also likes a bit of protection against the midday sun, perhaps achieved by planting under the eaves, an overhang or other semi-shelter. But are there no negatives to this plant? Yes, *passiflora* has one serious defect; it is subject to caterpillar infestation. Some of the strains are bred to be resistant, so check with the nursery before purchasing. Spray occasionally to eliminate or prevent a serious problem with this pest.

Sharon Siegan wrote this article for California Garden a short time before her demise in February 1985.

Bees and Bugs in Your Garden

By Eileen Rose-Busby

Most of us think of the bugs in our gardens as pesky creatures to be eliminated — necessary pests that appear when we plant flowers and shrubs. Bees we know have a necessary place in the scheme of a beautiful garden for pollination, but of what use are spiders and beetles? You would be surprised at the wealth of folklore, superstition, and information about many of our garden creatures.



BEES

Consider the buzzing bee. It not only provides us with wax and honey, and pollinates our plants, it is a regular hive of superstition and folklore as well. Did you know that if a bee flies in the window it will bring with it good news? And if you must kill a bee, do it on May 1st, then keep it in your purse, and you will never lack for money. From the busy bee we get such expressions as 'quilting bee,' to 'have a bee in your bonnet', and others. The thought that bees carried news was the origin of an age-old custom of 'telling the bees,' which was popular for centuries. If there was a wedding in the family, a piece of white ribbon tied on the beehive announced the news; a black ribbon on the family beehive indicated a death in the family. The bees took it from there. Bees were once considered sacred — ancient Egyptians used the emblem of the bee to symbolize royalty. Plato was known as the 'Attic Bee' or the 'Bee of Athens,' because it was said that a swarm of bees landed on his mouth when he was a baby, but did not sting him.

If you are afraid of being stung by a bee, take heart in the fact that you probably have a handy antidote for bee sting in your kitchen cupboard. The enzymes in unseasoned meat tenderizer will help to neutralize a sting.

Honey from the bee was once called the nectar of the gods, and was thought to bestow immortality. It was also considered an aphrodisiac, hence the word honeymoon. (The word aphrodisiac comes from Aphrodite, Greek goddess of love and beauty — she also had a butterfly name for her.) Bees, the ancients thought, once lived in Paradise, but flew to earth because of the sins of man. Some religions held the belief that each bee contained the soul of a dead person. A mysterious creature, the bee, defying the laws of flight with its ungainly body, punishing by stinging, and rewarding with the sweetest of honey.



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BETTER

What about the tiny little ladybug (called in Britain a lady bird)? It is not only a lucky bug, but very handy in the garden — it has a voracious appetite for aphids. There is a thriving ladybug industry. They can be bought by the box to help rid your garden of aphids, instead of resorting to poison sprays. The ladybug was sacred to the Norse goddess of love and beauty, Freya (Friday was named for her.) Ladybugs are part of the beetle family, a harmless member that does not bite or sting.

Another member of the beetle clan, the cricket, once was considered sacred in Egypt and ancient Greece. Cricket amulets (charms) were worn to protect from the evil of wicked spirits. An image of the scarab, especially the black winged dung beetle, was cut from a stone or gem and worn as a charm. The charm was often engraved with symbols on the underside.

If you want an unusual pet that requires little care, consider a pet cricket. Orientals keep them in cages as a sort of watchdog — they cheerfully chirp all night unless a stranger enters the house. An unusual sound will make them stop chirping — a sort of reverse burglar alarm.

The tree cricket can be used as a thermometer. How? Count the number of chirps in a 15-second period, add 40, and the answer is more or less the temperature, give or take a degree or two. And if you want to be assured that good luck will follow you, keep a cricket on your hearth.

SPIDERS

Spiders play an important part in folk medicine. To bring down a fever, swallow a spider with a little syrup, and it will eat up the fever, or so they say. But to prevent fever, seal up a spider in a nut shell and wear it on a chain or string around your neck. Spider webs were also handy for first aid, to stop the bleeding of a cut. The dustier the better, it was thought, never mind the germs (first things first.) And pulverized webs were used to cure infections. Not as far-fetched as one might think, though apparently spider webs have a healing quality. The modern drug called Arachnidin, is said to have as its base, spider webs.

Folklore said that if you carried a spider web in your pocket you would never go hungry. The design of a spider web was used by the American Indians. They made a webbed hoop for games such as cat's cradle, and in a larger version, as a sort of net for catching buffalo. The webbed Lacrosse stick is said to come from an Indian derivation of the spider web; this popular Canadian game was originated by the Indians.

For every garden bug there is a superstition or folklore, so think before you squash one of these — it could be an ancestor in a different form of life!

"50 YEARS AGO"

by
Carol Greentree

"Influence of Miss Sessions Evident in San Diego"

(October 7, 1935)

Editor,
California Garden,

When I came down with my wife to San Diego to be present at the ceremonies on September 24th in Balboa Park in honor of Miss Kate Sessions, I was very much impressed by the fact that in addition to garden lovers and horticulturists, so many prominent and busy men — bankers, merchants and professional men — had devoted the whole afternoon to do this lady honor. These people honored not only Miss Sessions, but honored themselves by this gesture and by their tribute to the life and work of this woman who has done so much for us in southern California.

Whenever I am fortunate enough to come to San Diego . . . I am always struck by the free use of flowering trees, shrubs and vines, which afford so much color and beauty . . . I wish all cities and towns in southern California would follow the example of San Diego and also of Santa Barbara . . . It is plain to see that the influence of Miss Sessions and her disciples has been to a great extent responsible for this desirable condition.

While it is perhaps true that beauty exists only in the eye of the beholder, no one can perceive these things (generous use of plants) without perceiving beauty. I never leave these two cities with their pleasant streets and roads without regret, and without cherishing in my heart the image of beauty I wish we might possess in more places in southern California.

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TERRESTRIAL CACTUS CULTURE

For The Amateur Collector

By Frank C. Thrombley

The techniques of successful cultivation for terrestrial cacti involve primarily three ingredients that I believe the amateur collector should know more about. They are the potting mix, the containers, and the water used. All three are dependent on the other to the degree that if we plan ahead properly we will be able to grow and show cacti with pride. Let us look at each one of these ingredients in the order they are listed.

POTTING MIX:

Potting mix may be considered from two entirely different aspects, one physical, the other chemical. Physical properties include porosity, resistance to caking, drainage, and moisture retention. Chemical constitution determines nutrient value and balance, organic and inorganic. A plant can only absorb the nutritive salts from the soil when they are in solution. The soil is the carrier of this solution and for this reason its physical properties are of great importance for the cultivation of cacti.

There are many different formulas for the potting mixture that one can use. It depends on your ambition, watering habits, location, and various other ingredients I call common sense. The real pleasure comes from developing your own mix that works for your set of conditions. However, I will give two that may be used to start us on our way.

Number One (A General Formula)

- 1 part coarse sand or agricultural pumice
- 1 part potting soil (packaged as a general soil for all plants)
- 1 part leafmold

Number Two (The Recommended Formula)

- 2 parts fibrous loam (do not use products sold for mulching that have fine particles.)
- 1 part oak leafmold
- 1 part agricultural pumice
- 1/8 part bone meal (for phosphorous)
- 1/8 part sulphate of potash (for potassium)
- 1/4 part horticultural charcoal

Both should be mixed thoroughly and stored in a clean container protected from the elements. A 3-pound size coffee can is the measuring device



Cephalocereus Senalis - Photo by Wilbur H. Glover

I use. It is usually divided by ribs on the can into four equal parts which makes for easier measuring.

Soil that is a mixture of clay with loam holds water very well. It also retains nutritive solutions firmly, not allowing them to be leached out easily. However, this soil is so closely packed it contains no air spaces and cracks form when it dries out. For pot culture, it must be lightened. Fibrous loam is preferred to the clayey loam, and in general, it will not become muddy when wetted nor cake hard when allowed to dry. The base for almost any potting mix is soil. One can choose between a packaged fibrous loam or a general potting soil.

Leafmold is a source of fixed nitrogen and carbon dioxide. It should be at least two years old and thoroughly rotted. Being fibrous in nature, it retains moisture well and is often used in potting mixes. Oak leafmold is probably the best for cactus culture because of its acidity. A good medium should not be alkaline but have a pH number of between 6 and 6.5.

Coarse sharp sand or agricultural pumice is added to assure open texture that will allow the water to drain thoroughly and not leave water pockets. The sand used must be coarse and not children's play sand, which will compact the soil. I prefer the agricultural pumice because it has a coarse granule and will not compact. This pumice is mined in California and is sold in most nurseries.

Before mixing these three ingredients to start our potting mix, let us look at the chemical requirements of the soil. In cactus regions, mineral salts are formed by gradual weathering of rocks. Since the weathering proceeds continuously, the natural soil in the cactus areas is a changing mixture of particles varying in size from pebbles down to sand and finer. In general, this has been derived from volcanic rocks and often contains a lot of nutritive substances, particularly as the scattered vegetation uses little food material.

In these dry areas the evaporation of moisture from the surface is so great that there is a rising flow of water by the capillary action of the soil. This capillary action brings up to the surface nutritive material from the deeper unused layers. These deep nutritive salts, products of the weathering of mineral substances, are, however, very poor in nitrates (nitrogen). This soil contains much phosphate and many potassium compounds.

Nitrogen (N) encourages growth, since it enhances the value of the other building materials. But in excess, which is soon reached in cacti, it leads to spongy tissue. The result is susceptibility to disease, bad over-wintering, and poor flowering.

Phosphorus (P) absorbed in the form of phosphates, favors the production of flowers, fruits, and seeds, and ensures sound growth. It also encourages the formation of roots on cuttings.

Potassium (K) is indispensable to a healthy metabolism in the plants and increases their power of resistance, even against water shortage.

Therefore, terrestrial cacti need soil with a high food content containing phosphorous and potassium but little nitrogen.

Besides the food content of the soil, there is also another chemical factor of importance to the well-being of the plant: the soil reaction. By soil reaction, we understand the acidity or alkalinity of the soil solution. The soil reaction is measured by a pH number which ranges from 1 to 14. The neutral value is pH7, values smaller than pH7 are acid and conversely values larger are alkaline. Many cacti specialists recommend a soil reaction of between pH5 and pH7. Further, they all claim the soil that is alkaline is not the best for growing cacti and can be detrimental. Through experimenting with various mixes, the one I have found that works well for me has a pH of 6 to 6.5.

There is one more component that should be considered for the potting mix: horticultural charcoal. Horticultural charcoal is activated to enable it to absorb certain objectionable by-products of bacterial action in soil to keep it sweet. Since cacti are apt to remain in one pot for a relatively long period, it is valuable to prevent sourness developing.

PLANT CONTAINER:

The container is as important as the soil; its nature is essential to success. The act of confining a cactus in a small pot is a radical departure from its normal way of life, where roots spread widely

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and seek the shelter and moisture of rock crevices.

Cactus can be grown in many different containers such as clay pots, tin cans, wooden boxes, glazed pots or dishes, and plastic pots. Pots are the most common containers used and so we will discuss them only.

Plants in porous clay pots dry out quickly and if they are exposed to prolonged hot sun, their fine roots will be scorched and die. To understand this, one must consider the relation between root and soil. The growing root attaches itself so closely to the soil particles by means of hundreds of very fine root hairs, that it seems almost as if united to them. Only in this way can the roots absorb the thin layer of water which surrounds the particles of soil. Now if the soil dries out, its volume is reduced. This reduction in volume produces a tension which tears the root hairs apart and sometimes the very young roots too. The porous pot promotes rapid evaporation since it is continually drawing water and nutritive salts from the soil. For this reason, one-quarter strength fertilizer should be added occasionally when watering.

Unless we have a planned schedule, we have a tendency to overwater and lose plants to root rot. For the novice cactus grower or those of us who live in a fog belt on the coast or where there is a great deal of overcast, I would certainly recommend clay porous pots. The exception to this recommendation would be pots under the

4-inch size. They dry out too fast and the cactus planted in them requires careful treatment.

Glazed or plastic pots, not being porous, do not have the disadvantages just described for the clay pot. One must remember, however, that most terrestrial cactus are especially sensitive to excessive moisture. Plants in these pots must be watered with more care because the moisture cannot escape from their sides. Glazed pots are usually selected for their decorative appearance. Plastic pots, also non-porous, are often used because they are light weight, inexpensive and come in a number of colors.

Consider the size of the pot in relation to the size of the plant being grown. Not only does a small plant look lost in a large pot, it rarely will survive. Unused soil generally becomes waterlogged and leads to rotting of the plant's roots. Conversely, you cannot expect a large plant to respond in a tiny pot. Generally, for round or spherical plants use a pot 1 or 2 inches wider than the diameter of the plant. For vertical specimens choose a pot half as wide as the plant is tall.

Clean all pots before planting to be sure they are free of dirt and possible insect eggs. All pots must have drainage holes in the bottom. If you have a decorative container with no drainage hole, plant the cactus in a clay pot, which will fit inside the more attractive container. When potting, cover the drainage holes with broken

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sections of clay pots, screening, or clean stones to prevent the potting mix from washing away. With plastic pots, it is a good idea to add extra stones or broken crocks to add weight to the bottom to help prevent the lightweight pot from tipping over with your prized cactus. When adding the potting mix, do not compress it around the plant with your thumb or fingers. Instead, gently tap the pot on the potting bench to settle it into the voids about the roots. Never fill the pot so that the mix covers the original soil line of the plant. It is best to leave at least one-half inch or more below the base of the plant. This space can then be filled with decorative gravel so that the base of the plant is not in contact with the soil. Remember cactus are especially sensitive to excessive moisture and this is certainly true at its base.

WATERING:

Many factors govern the watering schedule for cactus such as the type of soil, the kind of pot, the climate, the plant itself.

To say that cacti need no water or little water is nonsense. During the growing period they need water and like being dry as little as do other plants. If water is available to a cactus in its native land, then it grows; if there is none, then it goes to rest, at any period of the year. While all cacti, during the growing period, want a uniformly moist soil, a few genera and species are particularly sensitive to continual dampness, especially in cooler weather. Among these are the species from lower California. Those from

the coast of Chile, on the other hand, are very resistant to damp conditions. It is, therefore, impossible to lay down hard and fast rules about watering.

I started to collect cacti in the spring of 1976 and during the past four years have kept a file on each plant as I acquired it. During the first two years I used a moisture meter to probe the soil to determine when to water and logged this in the file. As a side note, I would add that using the moisture meter probe played havoc with the root ball of my plants. During the same two year period a planting mix was prepared which suited my needs. The knowledge gained from this led to the practice of watering my plants on a weekly, bi-weekly and monthly schedule, depending on the size and type of pot. I live in Escondido, California area, so I would not recommend my watering schedule for one who lives on the coast. In the Escondido area we are hotter in summer and colder in the winter months.

As a general rule for the beginner, use a medium that drains immediately, this means that the water does not stand on top of the pot for more than 30 seconds, preferably less. When watering be sure the water is draining out through the bottom drain holes before you stop. If air bubbles rise to the top of the pot while watering, continue until the bubbles stop. Never let a pot sit in water. This could happen when a potted plant is placed inside another container that has no drainage.

In the southern California foothills to the coastal areas, there are many micro-climates. Establish a watering program based on your area through trial and careful observations.

Remember that the planting mix, container, and water are dependent on each other for healthy growth. Do not be afraid to experiment; that is the joy of learning. Ask questions at society meetings. Visitors are welcomed and the advanced grower is always willing to help. Avail yourself of a library and learn more about each of your plant's habitat.

GOOD LUCK!

Frank Thrombley is past president of the San Diego Cactus and Succulent Society. He has an unusual collection of cacti and succulents which he exhibits in many shows.

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Book Reviews

By Mary Lou Orphey

EVERLASTINGS: The Complete Book of Dried Flowers, by Patricia Thorpe. Illustrated by Anita Marci and Mary Clase. 1985. Facts on File, Inc. 460 Park Avenue South, New York, N.Y. 10016. 8 1/2 x 8 1/2 in. hardback \$17.95 144 pages.

Zinnias, dahlias, tulips, narcissus, and roses picked fresh from the garden are lovely in floral arrangements. If preserved, one can enjoy these flowers almost forever. Think about drying spiraea, protea, clematis or celosia. Don't know the techniques? Find out how to dry these flowers and 79 others in this appealing book on preserving flowers and foliage. Methods detailed are air drying, the sand/borax method, drying chemicals, glycerine for foliage, and pressing.

Grow your own annuals, perennials, herbs and vegetables for drying; or collect interesting foliage and flowers in the wild. Guidelines for collecting the best everlastings are included in this attractive book.

GREENHOUSE GARDENER by Alan Toogood. 1985 ARCO Publishing, Inc., 215 Park Avenue South, New York, N.Y. 10003. 8 3/4 x 11 1/2 in. hardback \$11.95 72 pages.

No matter if one is struggling with an existing greenhouse or contemplating a new one, this book provides step-by-step instructions on all aspects of greenhouse gardening. There are color plates or diagrams on every page.

From choosing and building a greenhouse to providing heating, watering and ventilation, one learns the proper methods of controlling the environment for growing ornamentals, vegetables, and fruits.

Although there is no substitute for experience, the greenhouse calendar guides the gardener through the seasons.

Anyone interested in greenhouse gardening will enjoy reading this book.

A GUIDE TO HOME AND GARDEN PESTS: How to Identify and Eliminate Them Safely by Charles Kingsley Levy. 1985 Penguin Books. 40 West 23rd Street, New York, N.Y. 10010. 4 1/2 x 7 1/2 in. Paperback \$7.95 (US), \$9.95 (Can.) 182 pages.

This handy paperback covers the gamut from indoor to outdoor pests one may encounter in North America. Whether one sees the culprit or is left with the evidence, one can quickly find out how to prevent and control these pests.

Information on warm-blooded pests, invertebrates that bite or sting, insects that attack wood, kitchen and pantry pests, pests of fabrics, furs, leather and carpets, household pests, and lawn pests is organized for easy reference. The drawings are most helpful in identifying them. There is a chapter on the chemical control of pests and its danger.

The author has included fascinating facts about some pests with the hope that readers will both understand the pests' contributions to their environment and dispel our unfounded fears.

GARDEN PLANNING AND DESIGN by P. Francis Hunt. 1985 ARCO Publishing, Inc. 215 Park Avenue South, New York, N.Y. 10003. 8 3/4 x 11 1/2 in. hardback \$11.95 72 pages.

Since the average American family moves about once every seven years, many homeowners have several opportunities to redesign an old garden or create a new one. This book emphasizes the need to plan carefully; understanding the guidelines set forth will help the reader avoid mistakes.

Assessing the site and drawing up simple plans are explained. Various construction materials are evaluated. A step-by-step sequence of renovating a garden is included. Once the garden framework is designed, one learns about choosing plants to complement the layout. Sample plans illustrate the scope of design possibilities for any site.

GARDEN PLANNING AND DESIGN provides the information needed to create a practical and beautiful garden suitable for one's own needs and lifestyle.

SHRUBS AND SMALL TREES by David Stuart. 1985 ARCO Publishing, Inc. 215 Park Avenue South, New York, N.Y. 10003. 8 3/4 x 11 1/2 in. hardback \$11.95 72 pages.

The appropriate use of small trees and shrubs is essential in having a pleasing balance between land and building on residential lots. The illustrated guide to small shrubs, large shrubs, small garden trees, and climbers is helpful in designing a new garden or renovating an old one.

Other topics discussed are the selection and care of plants, plant problems, pruning for shape and flower, and pruning hedges and topiary. Advice on tree and shrub propagation will help gardeners to increase their stock and fill out bare spots in their gardens.

The handsome color photos show the mature shape and foliage of many of the plants described.

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INVENTORY OF RARE AND ENDANGERED VASCULAR PLANTS OF CALIFORNIA, Third Edition, 1985. Edited by James Payne Smith Jr. and Richard York, California Native Plant Society, 2380 Ellsworth, Suite D, Berkeley, CA 94704. 8½ x 11 in. paperback, \$10.95 plus \$1.50 postage. XXIV plus 174 pages.

This is a technical book outlining vascular plants that are presumed extinct in California, rare or endangered in California, and those limited in distribution. Vascular plants are ferns, fern allies, conebearing evergreens, and flowering plants.

The California Native Plant Society is an organization of laymen and professionals who have an interest in the plants of California. It wishes to preserve the native flora and educate members and the public.

Botanists and environmentalists will be particularly interested in the assemblage and evaluation of these rare and endangered vascular plants.

ARRANGING: The Basics of Contemporary Floral Design, by Hal Cook. Photographs by Bo Parker. 1985 William Morrow & Co. Inc., 105 Madison Avenue, New York, N.Y. 10016 7½ x 10½ in. hardback \$19.95 174 pages.

Just as sapphires, emeralds, and rubies sparkle in beautiful settings, this gem of a book is bejeweled with examples of mixing colors effectively in creating exquisite floral arrangements. The photographs are vibrant.

Elements and principles of design are discussed, as well as contemporary styles, line arrangements, flowers and branches, dried flowers, and miniatures. There are chapters on containers and the mechanics of arranging. Seven step-by-step arrangements help one to understand and apply the principles of floral design.

"Flowers and Their Seasons" shows full color close-up photographs of popular cut flowers and gives instructions for their use in floral arrangements.

ARRANGING is a notable book and a visual treat.

THE WILD GARDEN: Making Natural Gardens Using Wild and Natural Plants by Violet Stevenson. 1985 Viking Penguin Inc., 40 West 23rd Street, New York, N.Y. 10010. 8 3/4 x 8 3/4 in. paperback \$12.95 168 pages.

A book about gardens requiring poor soil will appeal to many gardeners in San Diego County. Just consider replacing a hungry lawn with a wildflower meadow. The poorer the soil, the more colorful the meadow flowers.

One learns how to plan a natural oasis; what to grow, how to plant it. The photographs are beautiful. Diagrams show how to transform traditional gardens into wild ones. A selective plant guide has charts describing plants featured in the chapters on planning successful wild gardens. Types of wild gardens discussed are wildflower lawns and meadows, wooded gardens, fern and foliage gardens, herb gardens, water gardens, and rock gardens.

The use of both low-water-use and native plants to create wild gardens provides a viable alternative to the water-hungry landscapes prevalent in our county. This book is timely, indeed.


ROCK GARDENS AND ALPINE PLANTS by David Joyce. 1985 ARCO Publishing, Inc. 215 Park Avenue South, New York, N.Y. 10003. 8 3/4 x 11½ in. hardback \$11.95 72 pages.

The major emphasis of this book is the selection and care of alpine plants for use in rock gardens and in other ways. Methods of growing alpine plants in raised beds, miniature gardens in troughs and sinks, rock plants in dry stone walls and alpenes in pots are explained.

Advice is given on the art of designing and constructing a rock garden. The rock garden calendar is helpful in planning attractive combinations of flowering and evergreen plants throughout the year.

Since rock gardens offer diversity for gardeners, especially on canyon and hillside lots, this book will be of interest to many San Diegans.

Mary Lou Orphey is a member of the La Jolla Village Garden Club, is a Master Gardener, and enjoys gardening.



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A CULTURAL CALENDAR OF CARE FROM OUR AFFILIATES

Compiled by Penny Bunker

BEGONIAS Margaret Lee

take cuttings to increase your collection or to share.

feed tuberous begonias in September as long as leaves remain green.

start withholding water from the tuberous in October and, of course, do not feed them again.

give final feeding of the year in October to your regular begonias unless you have fed all year around with a balanced fertilizer.

BONSAI Dr. Herbert Markowitz

adjust watering schedule according to changing weather; keep well watered if continued warm; if temperature falls, take care to not overwater — keep moist but not wet.

move deciduous trees to a cool shaded area if you live in southern California, so they will not sprout new growth.

fertilize only lightly in September and then not at all in October. Stop to encourage trees to prepare for winter dormancy.

feed $\frac{1}{2}$ strength fertilizer to those trees still showing signs of being in their growth cycle (showing new growth or buds, etc.).

transplant those specimens requiring a change of pot or new soil, but no drastic removal of root system — wait until spring.

trim conifers and pines. Also trim and shape your deciduous trees.

check wiring — remove if they are cutting in. If not removed they will cause the branch to die during the winter. Any wiring of small branches should be done most carefully as the branches are less flexible than in summer months.

BROMELIADS Linda Prell

adjust watering schedules according to weather changes. Hot, dry windy days may require misting and watering. If the weather cools, do not water more than once weekly.

protect plants from the hot sun. Check for sunburn and move to a safe place.

finish removing offsets before the weather changes.

fertilize very lightly ($\frac{1}{4}$ strength all purpose fertilizer) to prepare plants for winter.

keep cups clean and filled with water.

maintain insect and snail control programs. Put bait around plants, not in cups.

CACTI & SUCCULENTS Richard Latimer

keep moisture level high if dry, hot winds occur, but otherwise start hardening plants.

repot rootbound plants

feed with low nitrogen fertilizer.

check for insect pests and act accordingly.

look for scale. Use alcohol to eliminate this pest, either full strength or dab with cotton swabs.

divide overgrown plants and propagate new growth to increase your collection and/or share with friends.

let summer-active succulents become dormant around October 1st.

CAMELIAS Gene Snooks

start or continue to disbud for better blooms leaving one bud per cluster or one bud per branch for quality show blooms.

continue an even watering program during bud development.

spray for bud mites or spider mites with kelthane or similar miticide.

fertilize with 0-10-10, 2-10-10 or similar low nitrogen fertilizer to have best bloom development.

apply gibberellic acid for earlier blooms. Buds should open in about two months.

prepare for possible Santa-Ana winds with portable wind-breaks. Also wet the areas, as well as the leaves, several times per day during the Santa Ana.

DAHLIAS Abe Janzen

spray to prevent mildew and spider mites.

maintain regular watering until the first of October, then cut down gradually.

feed with potash to promote root growth. Also, it helps them to keep better during the winter.

clean up old leaves and stalks, preparing for fall and winter storage.

EPIPHYLLUMS Frank Granatowski

protect plants from excessive direct sunlight.

prevent the soil from drying out completely. Occasional misting or spraying of foliage can be very beneficial.

maintain good grooming of plants; remove dead non-productive and unsightly branches, conserving energy for the remainder of the plant.

practice preventive maintenance regarding insect control; use insecticides such

as Malathion or Orthene only if absolutely necessary. (Be sure to read and follow label instructions.)

bait for slugs and snails. A few granules of Slugeta at the base of the plant is an effective deterrent and leaves no residue.

protect new growth from wind damage.

protect the apples (seed pods) from pilferage by bluejays who are especially fond of the ripened fruit.

FERNS Ray Sodomka

water and maintain humidity by keeping surrounding areas damp. Beware of hot, dry winds.

plant spore of all varieties.

fertilize plants regularly with a high nitrogen formula.

avoid direct sun, but give maximum light. Maintain temperature of 70° to 78° F.

spray for scale and aphids; keep snails, pillbugs, and slugs under control.

trim off dead fronds.

repot your house ferns to next size pot if overcrowded.

feed house ferns (Boston fern) with 1/8 strength fertilizer every week and maintain humidity around plant with saucer pot or pebble filled water.

FUCHSIAS William Selby

mist plants during hot Santa Ana days, but do not overwater.

pick off all spent blossoms and seed pods.

continue fertilizing for winter bloom.

spray for insect control. Be sure to wet the underside of leaves as these are hiding places for egg laying.

take cuttings from good healthy branches; October is a better month to propagate new plants.

keep cuttings damp but not wet.

leach out salts from your pots, then give plants a shot of acid fertilizer.

GERANIUMS Carol Roller

water thoroughly when plants become somewhat dry. Allow the excess water to drain away. Keep foliage as dry as possible.

continue feeding with a balanced fertilizer dissolved in water, using at less than full strength as often as needed to keep plants growing well.

continue a pest and disease control program, using all products according to the manufacturer's directions.

begin pruning. On regals, scented, and similar types, at least one green leaf should be left on each stem.

make cuttings from the prunings. Shelter the cuttings from extreme weather.

keep unpruned plants well-groomed by removing faded flowers and discolored

leaves.

continue to rotate plants on a regular basis in order to produce well-shaped plants.

GESNERIADS Mike Ludwig

watch that shade remains on the plant as the sun is changing its position.

give less food to keep tender growth arrested until after winter cold.

watch for dry, hot weather as it means more watering, and red spider will be a problem; spray with keltthane.

withold water from the achimenes as they go into winter dormancy. Store the rhizomes in their pots or harvest them and store in slightly moist vermiculite.

sterilize greenhouse, getting ready to bring plants therein.

check your African violets; have a plant three times larger than the pot, means a 12-inch plant can be in a 4-inch pot. Repot accordingly.

check and control pests. Be sure to check new plants you may get and those you might bring inside from outdoors so you do not spread disease and pests to your indoor plants.

IRIS San Diego-Imperial Counties Iris Society

still divide and plant clumps of bearded iris.

feed established tall-bearded iris.

control slugs and snails.

plant beardless iris — Spurias, Siberians, Louisianas and Japanese varieties. Keep moist until well established. Louisianas and Japanese are grown in pots with pools or swampy conditions.

clean up beds and discard old fans and debris.

plant in October the Dutch bulbous iris for spring bloom.

trim the unguiculatus back so flowers may show.

ORCHIDS Charlie Fouquette

spray and mist during Santa Ana weather — maintain humidity and moisture.

clean area of debris (insects, snails and slugs must have a place to hide).

continue to water and shade plants during October — the sun is still able to burn plants.

begin low nitrogen feeding of cymbidiums. **feed** phals 3-1-2 formula; don't wet crowns of phals in evening.

keep leads of cattleya flowers staked up. **stake** the starting spikes of cymbidiums.

put your wet-pad and swamp cooler to rest for the winter as weather cools. Shut off water to cooler or pad. Disconnect electrical, drain water from reservoir, oil cups on fan and motor; cover

with canvas or visqueen.
avoid rotating plants once the flower spike has lengthened — keeps a nice display of flowers.

ROSES Brian Donn

do a thorough clean-up spray for mildew, rust, control of insects and worms. (Funginex is excellent).

control mites. Do a thorough drenching spray with kelthane.

continue your feeding program until mid-October.

water well during blistering Santa Ana conditions.

clean-up any debris, especially spent foliage, from around the rose bushes.

VEGETABLES

make first planting of the cool season vegetables for winter by setting started plants of cabbage and its relatives and celery.

plant seeds of mustard, peas, lettuce, and the root vegetables.

water deeply, as needed, instead of frequent light sprinkling — this will save both water and labor.

harvest vegetables now bearing heavily so they are in prime condition when used and the bushes and vines are encouraged to bear longer.

fertilize, as needed, so that plants grow vigorously and bear larger and more succulent edible parts.

GREEN THUMB

prepare bulbs beds with humus and start looking for bulbs in nurseries. It is too early for most bulbs to be planted, but if purchased, might be placed in an extra refrigerator for a few weeks before planting.

dust and stake chrysanthemums, but do not pinch tips any more; disbud for larger blooms on those varieties.

divide shasta daisies and transplant belladonna lilies after blooming.

mulch acid loving plants using peat moss or ground bark.

plant some spring flowers; calendulas, cinerarias, Iceland poppies, snapdragons, pansies.

plant in October watsonias, scillas, jonquils, and some daffodils.

feed well established shrubs with a balanced fertilizer; water thoroughly.

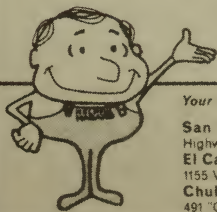
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SAN DIEGO FLORAL ASSOCIATION & GARDEN CENTER

Under the sponsorship of the Park & Recreation Department, City of San Diego

Meetings: 3rd Tuesday; February, April, June, October

Casa del Prado, Balboa Park, San Diego, California

AFFILIATE MEMBERS (CONTINUED)

PALOMAR DISTRICT

CALIFORNIA GARDEN CLUBS, INC.

Dir: Mrs. Alvin F. Putman 749-9587
15665 Fruitvale Road
Valley Center, CA 92082

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Pres: Mrs. G. William Dunster 222-9690
411 San Remo Way
San Diego, CA 92106
2nd Wed., Westminster Presby. Church
Talbot & Canon, 10:00 a.m.

POWAY VALLEY GARDEN CLUB

Pres: Mrs. Matt Sokach
P.O. Box 381
Poway, CA 92084
2nd Wed., Hally's Garden Room
13519 Poway Rd., Poway. 9:00 a.m.

SAN CARLOS GARDEN CLUB

Pres: Mrs. Paul Hebert 463-7517
6450 Lake Shore Drive
San Diego, CA 92119
4th Tues., Home of Members, 9:30 a.m.

SAN DIEGO COUNTY BRANCH

NATIONAL FUCHSIA SOCIETY

Pres: Janet Wright 722-3373
610 N. Nevada Street
Oceanside, CA 92054
2nd Thurs., Heritage Hall, McGee Pk.
258 Beech, Carlsbad, 7:00 p.m.

SAN DIEGO COUNTY DAHLIA SOCIETY

Pres: Mr. Martin Walsh 277-5165
4077 Mt. Everest Blvd.
San Diego, CA 92111
4th Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO COUNTY HERB SOCIETY

Pres: Mrs. Barbara Baker 756-2783
P.O. Box 1387
Rancho Santa Fe, CA 92067
2nd Sat., Homes of Members, 11:00 a.m.
(No meetings in July or August.)

SAN DIEGO COUNTY ORCHID SOCIETY

Pres: Mrs. Richard Bechtel 442-7180
10212 Vista de la Cruz
La Mesa, CA 92041
1st Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO BONSAI CLUB, INC.

Pres: Mr. John Jackson 443-8716
8678 Sky Rim Road
Lakeside, CA 92040
2nd Sun., Casa del Prado, 1:00 p.m.

SAN DIEGO BOTANICAL GARDEN FOUNDATION, INC.

Pres: Mr. Harry C. Haelsig 582-0536
4750 55th Street
San Diego, CA 92115

SAN DIEGO BROMELIAD SOCIETY

Pres: Mr. Jack Percival 222-7327
5205 Kearney Villa Way, Suite 210
San Diego, CA 92123
1st Thurs., Byzantine Catholic Church
2235 Galahad Rd., Serra Mesa. 8:00 p.m.

SAN DIEGO CACTUS & SUCCULENT SOCIETY

Pres: Dr. Leroy Phelps 280-9690
4094 36th Street
San Diego, CA 92104
2nd Sat., Casa del Prado, 1:30 p.m.

SAN DIEGO CAMELLIA SOCIETY

Pres: Mr. Palmer Groenwold 291-8912
1139 Madison Ave.
San Diego, CA 92116
3rd Wed., Casa del Prado, 7:30 p.m.

SAN DIEGO DAYTIME

AFRICAN VIOLET SOCIETY

Pres: Mrs. Toni Baker 582-7516
6475 50th Street
San Diego, CA 92120
2nd Mon., Fellowship Hall, Christ United
Methodist Church, 3295 Meade, 12 noon

SAN DIEGO EPIPHYLLUM SOCIETY

Pres: Mr. Ron Miller 746-9620
822 Via Rancho Parkway
Escondido, CA 92025
2nd Wed., Casa del Prado, 7:30 p.m.

SAN DIEGO FERN SOCIETY

Pres: Mr. Marvin Haworth 465-2727
10453 Fairhill Drive
Spring Valley, CA 92077
3rd Thurs., Casa del Prado, 7:30 p.m.

SAN DIEGO FUCHSIA & SHADE PLANT SOCIETY

Pres: Mr. Ron Berkel 465-7649
1142 Osage Drive
Spring Valley, CA 92077
2nd Mon., Casa del Prado, 7:30 p.m.

SAN DIEGO GERANIUM SOCIETY

Pres: Mrs. Eugene Cooper 295-7938
4444 Arista Drive
San Diego, CA 92103
2nd Tues., Casa del Prado, 7:30 p.m.

SAN DIEGO GESNERIAD SOCIETY

Pres: Mr. Mike Ludwig 574-1138
642 Torrance Street
San Diego, CA 92103
1st Thurs., Casa del Prado, 7:30 p.m.

SAN DIEGO—IMPERIAL COUNTIES IRIS SOCIETY

Pres: Mr. Albert Feldman 747-6584
2050 Oakhill Drive
Escondido, CA 92027

SAN DIEGO ROSE SOCIETY

Pres: Mr. Henry McCarty 749-8560
28034 Glenmeade Way
Escondido, CA 92026
3rd Mon., Casa del Prado, 7:30 p.m.

SAN MIGUEL BRANCH

AMERICAN BEGONIA SOCIETY

Pres: Mr. Mike Ludwig 574-1138
642 Torrance Street
San Diego, CA 92103
1st Wed., Casa del Prado, Rm. 104, 7:30 p.m.

SOGETSU SCHOOL OF IKEBANA

Pres: Mrs. Leroy Lahey 423-1571
2829 Flax Drive
San Diego, CA 92154

SOUTHWEST GROUP, JUDGES COUNCIL

Chr: Mrs. Edwin R. Gould 475-8996
2111 Rachael Avenue
San Diego, CA 92139
1st Wed., Casa del Prado, 10:00 a.m.

SOUTHWEST HEMEROCALLIS SOCIETY

Pres: Mr. C.R. Bowman 273-7937
3927 Sequoia Street
San Diego, CA 92109
1st Sat., Feb., Apr., Jun., Sep., Nov. 10 a.m.
Quail Gardens Meeting Room
Quail Gardens Rd., Encinitas

VILLAGE GARDEN CLUB OF LA JOLLA

Pres: Mrs. B.B. Puddy 487-4148
16303 Avenida Florencia
Poway, CA 92064
4th Thurs., La Jolla United Methodist
6063 La Jolla Blvd., La Jolla 1:00 p.m.

PROFESSIONAL AFFILIATES

BENNETT'S GARDEN CENTER

Attn: Fran Valleria 454-4241
7545 Draper Avenue
La Jolla, CA 92037

CALIFORNIA ASSOCIATION OF NURSERYMEN

SAN DIEGO CHAPTER

Pres: Hank Coide 297-4216
5115 Linda Vista Road
San Diego, CA 92110

See July 1985
National Geographic
for article about saving
the world's largest flower
Rafflesia arnoldii
found in Malaysia

HORTICULTURE CALENDAR

continued from inside front cover

October 15 *	San Diego Floral Association Meeting Gardening Gala Pot Luck Casa del Prado, Majorca Room 101. Balboa Park 6:30 p.m., \$2.00 for non-members, \$1.00 for members. Call office (619) 232-5762 for reservations. There will be demonstrations plus a question and answer period conducted by various experts.
October 19	San Diego Chapter, California Native Plant Society Annual Plant Sale Casa del Prado, Patio "A" Balboa Park Sat: 10:00 a.m. - 4:00 p.m.
October 19 & 20	North San Diego County Rose Society's 19th Annual Rose Show Plaza del Camino Real, 2525 El Camino Real, Carlsbad Sat: 1:00 - 6:00 p.m. Sun: 12:00 noon - 4:00 p.m. FREE
October 19 & 20	San Diego Orchid Fall "mini" Show Casa del Prado, Marjorca Room Balboa Park Sat: 12 noon - 5:00 p.m. Sun: 10:00 a.m. - 4:30 p.m. FREE
October 26	Santa Barbara Botanic Garden's Annual Sale of Native Plants 1212 Mission Canyon Road, Santa Barbara Sat: 1:00 p.m. - 4:00 p.m. FREE
October 26 & 27	Palomar Orchid Society 10th Annual Fall Show "Orchid Safari" Plaza Camino Real, 2525 El Camino Real, Carlsbad Bullocks Upper Level Sat. & Sun. FREE Information: 298-5182 or 296-2757
November 2	Rancho Santa Ana Botanic Gardens' Sale of Native California Plants and Drought-tolerant material, Rancho Santa Ana Botanic Garden, Claremont 1500 North College Ave. 8:00 a.m. - 2:00 p.m.
November 2 & 3	San Diego Tropical Fish 15th Annual Aquarium Show Casa del Prado, Majorca Room Balboa Park Sat: 12:00 noon - 6:00 p.m. Sun: 9:00 a.m. - 4:00 p.m. FREE
November 13*	Bus tour to Camp Pendleton, lunch in mess hall, tour of ranch house and crash crew demonstration. Reservations (619) 232-2661.

* = San Diego Floral event

** = San Diego Floral event — classes limited to 20 students who will be accepted in order of receipt of payment. Make checks payable to San Diego Floral Association. Send to class coordinator: Marie Walsh, 3570 Union Street, San Diego, CA 92103. Telephone: 298-5182. Bring fresh flowers, greens, clippers, container and mechanics. Bring sack lunch. Beverages provided.

1985 Del Mar Fair



Photographer — Wilbur H. Glover

Upper left *America the Beautiful*
 Upper right *Color Me Beautiful*
 Lower left *Color Me Beautiful*
 Lower right *Color Crazy*
 Center *The New Math*